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**A Laboratory Study of the
Validity of the MGQT:
An Executive Summary**

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BACKGROUND

One of the missions of the Research Division of the Department of Defense Polygraph Institute is to examine the validity of the techniques taught in the Basic Course at the Institute. One widely used technique is the mixed general questions test (MGQT). We examined the validity of the MGQT in an analog study.

THE EXPERIMENT

The subjects were 58 male and 30 female enlisted trainees at Fort McClellan. The average age of the subjects was 18.9 years. Subjects were randomly assigned to one of two conditions of equal size. Half of the subjects were innocent and half were guilty of committing a mock theft of money.

The polygraph examinations were conducted by 13 instructors from the Defense Polygraph Institute. They used standard field instrumentation and the techniques taught at the Institute. During their polygraph examinations, subjects were treated as if they were criminal suspects. The subjects were given a MGQT examination according to the rules taught at the Institute.

Regardless of the test outcome, no interrogation or additional testing was conducted. The charts were numerically scored by the examiner immediately following the test using the scoring rules taught at DODPI. The scores for each relevant question were summed across the channels and the three charts. Scores of -3 or lower to any relevant question on a test resulted in a deceptive (DI) outcome. If the test was not deceptive, but any relevant question had a score between +2 to -2 inclusive, the outcome was inconclusive. Only if the scores on all relevant questions were +3 or higher was the test categorized as truthful (NDI).

RESULTS

The overall performance of the original examiners is shown in Table 1. With the Innocent subjects, 40.9% of the decisions were correct, 34.1% were inconclusive, and 25% were false positive errors. With the Guilty subjects, 86.4% of the decisions were correct, 4.5% were inconclusive, and 9.1% were false negative errors. Overall, this represents statistically significant performance of classification. However, the performance of the original examiners with the Innocent subjects was not better than chance.

Table 1. Decisions of the original examiners.

Condition	Decision			TOTAL
	NDI	INC	DI	
Innocent	18	15	11	44
Guilty	4	2	38	44

An additional analysis was conducted on the numerical scores. The numerical scores of the original examiner were correlated with guilt/innocence criterion. The resulting validity coefficient of $r = .63$ was statistically significant.

DISCUSSION

The results of this validation study are disturbing. Performance of the MGQT with Innocent subject was poor. Other laboratory studies have generally produced much better results with Innocent subjects. Thirty-four percent of the Innocent subjects were called inconclusive. If inconclusives are ignored, approximately 40% of the calls on Innocent subjects are incorrect. This performance is as bad as that predicted by the strongest critics of the polygraph.

Additional research is needed to determine the causes of this poor performance. It appears unlikely that the lack of explicit incentives associated with the outcomes of the examinations could account for a high false positive rate, if anything it seems likely that a low motivational setting would contribute to an underestimation of the false positive rate. There are a number of factors that could possibly account for the results of this study. Some of them are:

1. Support troops may be poor subjects for study.
2. There may be important differences between the Institute and other laboratories in the staging of the mock crime.
3. There may be critical differences in the pretest between laboratories.
4. There are differences in the scoring rules.
5. The MGQT in general, or as it is applied by DOD in these mock crime situations may be biased against innocent subjects.